No. 7900042

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Ben Fish and Son

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF seventeen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS F CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LIMA BEAN

'Sprigg'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 5th *day of* June *in the year of our Lord one thousand nine hundred and* eighty.

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED
OMB NO. 40-R3822

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME "SPRIGG"	FOR OFFICIAL USE ONLY PV NUMBER 7900042
2. KIND NAME Large Lima bean	3. GENUS AND SPECIES NAME ~~White seed coat~~ Phaseolus lunatus ~~large lima pole~~ jet 791189	FILING DATE: 1-29-79 TIME: 10:00 A.M.
4. FAMILY NAME (BOTANICAL) Leguminosae jet ~~phaseolus lunatus~~ 791109	5. DATE OF DETERMINATION 10-16-78	FEE RECEIVED: $ 500.00 / $ 250.00 DATE: 1-29-79 / 5/13/80

6. NAME OF APPLICANT(S) Ben Fish and Son	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* P.O. Box 417 Crows Landing, CA 95313	8. TELEPHONE AREA CODE AND NUMBER AC 209 837-4725
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* Division of Dompe Warehouse Co., Inc.	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION California, 6-17-55	11. DATE OF INCORPORATION 6-17-55

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:
A. G. Mendoza
P.O. Box 417
Crows Landing, CA 95313

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [ ] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? [X] YES [ ] NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? [X] FOUNDATION [X] REGISTERED [X] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [X] YES [ ] NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

1/19/79 (DATE) — Paul L Dompe, Manager (SIGNATURE OF APPLICANT)

(DATE) — (SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $500 fee ($250 filing fee and $250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.

14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)

15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

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EXHIBIT 13-A

Origin and Breeding History of the Variety

1. "SPRIGG" originated in California, in 1963, from an individual pole lima selection discovered in a field planting of experimental Green Seeded Fordhook bush lima line, P-38-1. This pole selection was identified as, AV1-63. The seeds from this pole selection were segregating in various ways, but most were; large-flat large lima shape and size.

2. In 1964, only the large-flat seeds from selection AV1-63 were planted and identified as, 479-64. This selection was segregating to bush and pole plant types. An individual pole selection was made from 479-64 and identified as, 479-64-1. The seeds from this pole selection were segregating and the only type saved were the large-flat size.

   In 1965, only the large-flat seeds from selection 479-64-1 were planted and was identified as, 191-65-D. This line was segregating in various ways, except, all plants were pole type. An individual pole selection was made from 191-65-D, and identified as 191-65-D-1.

   From 1966 to 1971, no studies were conducted, however, the seed from selection 191-65-D-1 was saved.

   In 1972, because of a re-newed interest in a better white seed coat large lima bean, the entire product of selection 191-65-D-1 was planted and identified as, 101-72-G. All of the line was pole type, but was segregating to mottled and plain primary leaves. Because the selection was planted late in the season for complete pod and seed development, no individual plant selections were made, only a hand shelled field bulk of mature pods and seeds.

   In 1973, the hand shelled bulk of 101-72-G was planted and identified as, 27-73-A. All plants were pole type, but were segregating to plain and mottled primary leaves. Twelve individual selections were made from bulk line 27-73-A of mottled and plain leaf type. One of these had mottled primary leaves and was identified as 27-73-A-2. This had the following attributes; uniform size large-flat seeds, white seed coat and white cotelydon. It was noted that bulk line 27-73-A had the following characteristics:

   a. early primary racemes
   b. short narrow slight curved pods
   c. blossom and pod set in clusters away from the crown of plant
   d. segregating; seed size, seed coat, and cotelydon color

   In 1974, individual selection 27-73-A-2 was planted and identified as, 24-74-B. Line 24-74-B had the following characteristics:

   a. mottled primary leaves
   b. uniform size large-flat seeds
   c. white, seed coat and cotelydon
   d. early primary racemes
   e. blossom and pod set in clusters away from the crown of plant
   f. segregating pod shape and size

   Individual selections were made from 24-74-B and one was identified as, 24-74-B-12.

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2. In 1975, individual selection 24-74-B-12 was planted and identified as, 18-75-DB. This line had the same characteristics as, 24-74-B, except, the pods were uniformly slightly wider. An individual selection was made from 18-75-DB and identified as 18-75-DB-1.

   In 1976, individual selection 18-75-DB-1 was planted and identified as, 312-313-76-DB. This line had the following characteristics:

   a. Mottled primary leaves
   b. Uniform size large-flat seeds
   c. White seed coat and cotelydon
   d. Early primary racemes
   e. Blossom and pod set in clusters away from the crown of plant
   f. Uniform, slightly wide, medium long pods

   Twenty five ounces of line 312-313-76-DB was planted and yielded sixty five pounds.

   In 1977, twenty eight pounds of bulk line 312-313-76-DB was planted and it had the same characteristics as above. This line was identified as 286-77-S and yielded, six hundred pounds.

   In 1978, the six hundred pounds was further increased and identified as Lot 3963 (Dompe Warehouse Company records). This increase had the same characteristics as listed in 1976.

3. No statistical data was kept on the varients during reproduction or multiplication as the only seed of interest was the large lima, white seed coat types. All others were discarded. Varients were identified by;

   a. seed size and shape; small round plump to large-flat.
   b. plant type; bush and pole.
   c. seed coat color; green to white
   d. cotelydon color; green to white
   e. pod size and shape; short narrow to medium long- medium wide.

4. As evidenced in item two, of this exhibit, the line was stabilized in 1976 in the seventh generation. Data from bulk increases, as shown in item two of this exhibit, from 1976 to 1978, indicates a ~~homozygos~~ homogeneous variety for the past three generations.

JEF 800110

Lima Bean Application No. 7900042 'Sprigg'

Addendum to Exhibit A

4. Evidence of stability and uniformity was established in the seventh generation and data from bulk increases indicates a ~~homozygos~~ homogeneous variety having the following characteristics:

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8001/8

a. Mottled primary leaves

b. Uniform size large-flat seeds

c. White seed coat and cotyledon seeds

d. Early primary racemes

e. Blossom and pods set in clusters away from the crown of plant

f. Uniform, slightly wide, medium long pods

There are no variants.

EXHIBIT 13-B

revised 0.0ym

Novelty Statement

Novelty is based on the following character:

"SPRIGG" most closely resembles white seed coat large lima, "WESTLEY" except it has; pods that are shorter and more narrow with a slight curve.

Included with this statement are:

1. One photograph identified as Photo -1- Exhibit 13-B "SPRIGG"
2. Three packages containing dry pod and seed specimens and identified as;
    a. Package 1 Exhibit 13-B "SPRIGG"
    b. Package 2 Exhibit 13-B "SPRIGG"
    c. Package 3 Exhibit 13-B "SPRIGG"

Lima Bean Application No. 7900042 'Sprigg'

Addendum to Exhibit B

The difference in pod width and length between 'Sprigg' and 'Westley' expressed numerically is as follows:

'Westley' -- 22mm wide and 11.4cm long

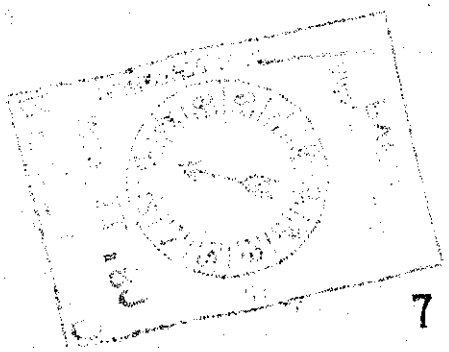
'Sprigg' -- 16mm wide and 9.5cm long

Lima Bean Application No. 7900042 'Sprigg'

Addendum No. two, Exhibit 13-B

'Sprigg' may be distinguished from all other varieties in the same crop as it has pods that are shorter and more narrow, with a slight curve. 'Ventura N', 'Ventura 65' and 'Westley', which are the currently grown varieties, have pods that are longer and wider. These varieties are easily distinguished visually when compared to 'Sprigg'. Dry pod specimens of the four lines have been submitted to show this comparative visual difference.

Previously submitted addendum to Exhibit 13-B stating the numerically expressed relationship between pods from 'Sprigg' and 'Westley' was ascertained from a photograph copy of a photograph included with the dry pod specimens and identified as, Photo -1- Exhibit 13-B 'Sprigg'. This photo has a 1/4 inch tape scale and the data was determined by conversion of this scale to metric.



FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-15
(1/77)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN AND SEED DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
(Lima Bean)

OBJECTIVE DESCRIPTION OF VARIETY

REFERENCES: See Reverse.

LIMA BEAN *(PHASEOLUS LUNATUS)*

NAME OF APPLICANT(S)
BEN FISH & SON

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
P.O. BOX 417
Crows Landing, CA 95313

FOR OFFICIAL USE ONLY

PVPO NUMBER
5TR166

VARIETY NAME OR TEMPORARY DESIGNATION
7900042

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. TYPE:

[2] 1 = GREEN SHELL 2 = DRY EDIBLE 3 = DUAL PURPOSE

2. REGION OF ADAPTABILITY IN THE U.S.:

[5] Best adapted in: 1 = NORTHWEST 2 = NORTHCENTRAL 3 = NORTHEAST 4 = SOUTHEAST 5 = SOUTHWEST 6 = MOST REGIONS

3. MATURITY (Days from seeding to first harvest):

~~[0][0]~~ GREEN SHELLS [1][3][0] DRY SEEDS

[0][0] No. of days *Earlier* than: .... [7]
[0][5] No. of days *Later* than ..... [7]

[7] 1 = HENDERSON BUSH 2 = THAXTER 3 = BURPEE'S IMPROVED BUSH 4 = SIEVA 5 = FLORIDA BUTTER 6 = KING OF THE GARDEN 7 = OTHER (Specify) "Westley" Large Lima Pole

4. PLANT:

[4] 1 = DETERMINATE, ERECT BUSH 2 = DETERMINATE, SPRAWLING BUSH 3 = DETERMINATE, SEMIPOLE 4 = INDETERMINATE, POLE

[0][6][0] CM. HEIGHT

[0][1] CM. LENGTH OF FIRST INTERNODE ABOVE PRIMARY LEAF

[1][8][0] CM. SPREAD

[1][0] NUMBER INTERNODES ON MAIN STALK BETWEEN PRIMARY LEAF AND BASE OF TERMINAL INFLORESCENCE

[0][8] MM. STALK DIAMETER ABOVE FIRST TRIFOLIATE LEAF

[2] Main stalk: 1 = BRITTLE 2 = WIREY

[1] Main stalk: 1 = STOUT 2 = THIN

[3] Flower position:
[3] Pod position:
1 = LOW, CONCENTRATED 2 = HIGH, CONCENTRATED 3 = SCATTERED

5. LEAVES:

[1] 1 = SMOOTH 2 = WRINKLED

[1] 1 = DULL 2 = GLOSSY

[2] Thickness: 1 = THIN 2 = MEDIUM 3 = THICK

[3] Size: 1 = SMALL (Sieva) 2 = MEDIUM 3 = LARGE (Prizetaker)

[0][5] CM. PETIOLE LENGTH (To basal leaflets of first trifoliate leaf)

[2] Tip shape of center leaflet: 1 = ROUNDED 2 = TAPER POINTED 3 = SHARP POINTED

[1] PUBESCENCE - Dorsal:
[2] PUBESCENCE - Ventral:
1 = NONE 2 = SLIGHT 3 = CONSIDERABLE

[1] Color: 1 = GRAY GREEN 2 = MEDIUM GREEN (Burpee's Improved Bush) 3 = DARK GREEN (Sieva)

6. FLOWERS:

[2] Color: 1 = WHITE 2 = CREAM 3 = PINK 4 = LILAC 5 = PURPLE 6 = OTHER (Specify)

8

[6][0] Racemes: CM. TO BASE OF TERMINAL FLORET

[4][0] NUMBER FLOWERS PER RACEME

7. FRESH PODS:

[2] Color: 1 = LIGHT GREEN (Thaxter) 2 = MEDIUM GREEN (Florida Butter) 3 = DARK GREEN (Thorogreen Early) 4 = OTHER (Specify) _____

[1][0] CM. LENGTH [2][2] MM. WIDTH (Between sutures) [1][0] MM. THICKNESS [2][2] WIDTH / THICKNESS X 10

[2] Cross section pod shape: 1 = FLAT 2 = OVAL 3 = ROUND [3] Curvature: 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = CURVED

[3] MM. SPUR LENGTH [2] Spur: 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = CURVED

[2] Surface: 1 = SHINY 2 = DULL [1] Surface: 1 = SMOOTH 2 = BLISTERED

[1] Pubescence: 1 = NONE 2 = SPARSE 3 = CONSIDERABLE [2] NUMBER OF SEEDS PER POD

[8][9] NUMBER PODS PER PLANT (Once over harvest) [1] Machine harvest: 1 = ADAPTED 2 = NOT ADAPTED

Condition of pods at once-over harvest: [9][9] % DRY [0][1] % YELLOW [0][0] % GREEN

8. SEEDS:

[1] 1 = MONOCHROME 2 = POLYCHROME [1] 1 = SHINY 2 = DULL

[0][1] Primary color: [0][4] Secondary color: 1 = WHITE 2 = GREENISH WHITE 3 = GREEN 4 = YELLOW 5 = BUFF 6 = TAN 7 = BROWN 8 = PINK 9 = RED 10 = PURPLE 11 = BLACK 12 = OTHER (Specify) _____

[0] Color pattern: 1 = SPLASHED 2 = MOTTLED 3 = STRIPED 4 = FLECKED 5 = DOTTED

[1] Secondary color location: 1 = HILAR RING 2 = HILAR SURFACE 3 = STROPHIOLE 4 = MICROPYLE 5 = SIDES 6 = DORSAL SURFACE 7 = NOT RESTRICTED TO ANY AREA 8 = COMBINATION OF LOCATIONS (Specify) _____

[2] Hilar ring: 1 = NOT PRESENT 2 = NARROW 3 = WIDE 4 = BUTTERFLY SHAPED [2] Vein-like under coat pattern: 1 = ABSENT 2 = PRESENT

[1] Cotyledon color: 1 = WHITE 2 = PALE GREEN 3 = GREEN [1] Seed coat 1=SMO 2=WRN

9. SEED SHAPE AND SIZE:

[1] Hilum view: 1 = FLAT 2 = ELLIPTICAL 3 = OVAL 4 = ROUND [1] Side view: 1 = OVAL 2 = ROUND 3 = KIDNEY 4 = TRUNCATE ENDS

[2] Cross section: 1 = FLAT 2 = ELLIPTICAL 3 = OVAL 4 = ROUND [1][0][5] GM. WEIGHT PER 100 SEEDS

[4] Classification: 1 = SIEVA 2 = INTERMEDIATE 3 = FORDHOOK 4= large lima flat

[1][2] MM. WIDTH (Dorsal to ventral) [0][6] MM. THICKNESS (Side to side)

[2][1] MM. LENGTH [2][0] WIDTH / THICKNESS X 10

10. ANTHOCYANIN: (1 = Absent, 2 = Present)

[1] FLOWERS [1] STEM [1] PODS [1] SEEDS [1] LEAVES

11. DISEASE RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] RUST (Specify race) _____	[0] ANGULAR LEAF SPOT	[0] BACTERIAL WILT
[0] COMMON BEAN MOSAIC	[0] ANTHRACNOSE	[0] LIMA BEAN MOSAIC
[0] SOUTHERN BEAN MOSAIC	[0] FUSARIUM ROOT ROT	[0] CURLY TOP
[0] N.Y. 15 BEAN MOSAIC	[0] DOWNY MILDEW	[0] POWDERY MILDEW
[0] BEAN MOSAIC VIRUS 4	[0] HALO BLIGHT	[0] FUSCOUS BLIGHT
[0] ALFALFA MOSAIC VIRUS	[0] ALFALFA MOSAIC VIRUS 2	[0] POD MOTTLE VIRUS
[0] RED NODE VIRUS	[0] ROOT KNOT NEMATODE	[0] OTHER (Specify) _____

12. INSECT RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] APHIDS	[0] LEAF HOPPERS	[0] POD BORER	[0] LYGUS
[0] THRIPS	[0] WEAVILS	[0] SEED CORN MAGGOT	[0] OTHER (Specify)

13. PHYSIOLOGICAL RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] HEAT	[0] COLD	[2] DROUGHT	[0] OTHER (Specify)

REFERENCES

The following publications may be used as references in completing this form:

1. Beans of New York. Vol. 1 Part II of Vegetables of New York. U.P. Hedrick et al. J. B. Lyon Company, Albany, N.Y. 1931.

2. Yarnell, S. H., Cytogenetics of the Vegetable Crops IV. Legumes. Bot. Rev. 31:247 - 330. 1965.

3. USDA Yearbook of Agriculture. 1937.

COLOR: Nickerson's or any recognized color fan may be used to determine the colors.

COMMENTS:

Item 2 - If 5 = SOUTHWEST includes California, then 5 is applicable to region of adaptability.

Item 3 - Insufficient boxes for dry seeds; maturity from seeding to first harvest; inserted one additional.

Item 4 - CM height was determined by the height of plants in a commercially grown field.

CM spread was determined by the length of spread of an isolated plant. Insufficient boxes for this, inserted one additional.

Item 9 - Classification: additional number is needed for large lima size seed, inserted 4 = LARGE LIMA FLAT

Isufficient boxes for GM weight per 100 seeds inserted one additional.

FORM APPROVED. OMB NO. 40-R3712

FORM LPGS-470-15
(4-78)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Lima Bean)

OBJECTIVE DESCRIPTION OF VARIETY

REFERENCES: See Reverse.

LIMA BEAN *(PHASEOLUS LUNATUS)*

NAME OF APPLICANT(S)

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*

KFX (4/1/98)

FOR OFFICIAL USE ONLY

PVPO NUMBER

VARIETY NAME OR TEMPORARY DESIGNATION

Place the appropriate number that describes the varietal character of this variety in the boxes below:
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. TYPE: TYPE

[ ] 1 = GREEN SHELL GNSH 2 = DRY EDIBLE DYED 3 = DUAL PURPOSE DUPL

2. REGION OF ADAPTABILITY IN THE U.S.:

RE [ ] Best adapted in: 1= NORTHWEST NW 2 = NORTHCENTRAL NC 3 = NORTHEAST NE 4 = SOUTHEAST SE 5 = SOUTHWEST SW 6 = MOST REGIONS MR *

3. MATURITY (Days from seeding to first harvest):

[G][S] GREEN SHELLS _ _ → [D][Y] DRY SEEDS _ _ →

DAYE [ ][ ] No. of days *Earlier* than: EARLY [ ]
DAYL [ ][ ] No. of days *Later* than . Later [ ]
1 = HENDERSON BUSH 2 = THAXTER 3 = BURPEE'S IMPROVED BUSH
4 = SIEVA 5 = FLORIDA BUTTER 6 = KING OF THE GARDEN
7 = OTHER (Specify) *

4. PLANT: HABT 1=DTEB 2=DTSB 3=DTSM

[ ] 1 = DETERMINATE, ERECT BUSH 2 = DETERMINATE, SPRAWLING BUSH 3 = DETERMINATE, SEMIPOLE
4 = INDETERMINATE, POLE INDT

[H][G][T] CM. HEIGHT

[I][L] CM. LENGTH OF FIRST INTERNODE ABOVE PRIMARY LEAF

[S][P] CM. SPREAD

[I][N][T] NUMBER INTERNODES ON MAIN STALK BETWEEN PRIMARY LEAF AND BASE OF TERMINAL INFLORESCENCE

[D][M] MM. STALK DIAMETER ABOVE FIRST TRIFOLIATE LEAF

STEX [ ] Main stalk: 1 = BRITTLE BRT 2 = WIRY WIR

STK [ ] Main stalk: 1 = STOUT ST 2 = THIN TH

FPN [ ] Flower position:
PPN [ ] Pod position:
1 = LOW, CONCENTRATED LCN 2 = HIGH, CONCENTRATED HCN 3 = SCATTERED SCA

5. LEAVES:

LFSUR [ ] 1 = SMOOTH SMO 2 = WRINKLED WRN

LGLOS [ ] 1 = DULL DL 2 = GLOSSY GL

LT [ ] Thickness: 1 = THIN TN 2 = MEDIUM ME 3 = THICK TK

SZ [ ] Size: 1 = SMALL (Sieva) SM 2 = MEDIUM ME 3 = LARGE (Prizetaker) LG

[P][L] CM. PETIOLE LENGTH (To basal leaflets of first trifoliate leaf)

LTS [ ] Tip shape of center leaflet: 1 = ROUNDED RND 2 = TAPER POINTED TAP 3 = SHARP POINTED SHP

DP [ ] PUBESCENCE - Dorsal:
VP [ ] PUBESCENCE - Ventral:
1 = NONE NO 2 = SLIGHT SL 3 = CONSIDERABLE CN

LCOL [ ] Color: 1 = GRAY GREEN GYGN 2 = MEDIUM GREEN (Burpee's Improved Bush) MEGN 3 = DARK GREEN (Sieva) DRGN

6. FLOWERS:

FCL [ ] Color: 1 = WHITE WHI 2 = CREAM CRM 3 = PINK PNK 4 = LILAC LIL 5 = PURPLE PUR 6 = OTHER *(Specify)* OTH *

[R][L] Racemes: CM. TO BASE OF TERMINAL FLORET

[F][L] NUMBER FLOWERS PER RACEME

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7. FRESH PODS:

PCOL Color: 1 = LIGHT GREEN (Thaxter) LTGN 2 = MEDIUM GREEN (Florida Butter) MEGN 3 = DARK GREEN (Thorogreen Early) DRGN 4 = OTHER (Specify) _____

LN CM. LENGTH — WD MM. WIDTH (Between sutures) — PT MM. THICKNESS — IX WIDTH / THICKNESS X 10

XCS Cross section pod shape: 1 = FLAT FLA 2 = OVAL OVL 3 = ROUND RND — PC Curvature: 1 = STRAIGHT ST 2 = SLIGHTLY CURVED SC 3 = CURVED CV

MM MM. SPUR LENGTH — SS Spur: 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = CURVED

PGLOS Surface: 1 = SHINY SH 2 = DULL DL — PTEX Surface: 1 = SMOOTH SM 2 = BLISTERED BL

PU Pubescence: 1 = NONE NO 2 = SPARSE SP 3 = CONSIDERABLE CN — NOS NUMBER OF SEEDS PER POD

PD NUMBER PODS PER PLANT (Once over harvest) — MAC Machine harvest: 1 = ADAPTED ADP 2 = NOT ADAPTED NAD

Condition of pods at once-over harvest: PERD % DRY — PERY % YELLOW — PERG % GREEN

8. SEEDS:

COL 1 = MONOCHROME MONO 2 = POLYCHROME POLY — LR 1 = SHINY SH 2 = DULL DL

RIM Primary color: 1 = WHITE whit 2 = GREENISH WHITE GNWH 3 = GREEN GREN 4 = YELLOW YELL 5 = BUFF BUFF 6 = TAN TANN PLGNS?

ECD Secondary color: 7 = BROWN BRWN 8 = PINK PINK 9 = RED REDD 10 = PURPLE PURP 11 = BLACK BLCK 12 = OTHER (Specify) other crem = cream LTGN = Light green

AT Color pattern: 1 = SPLASHED SPL 2 = MOTTLED MOT 3 = STRIPED STP 4 = FLECKED FLC 5 = DOTTED DOT

LOC Secondary color location: 1 = HILAR RING HRNG 2 = HILAR SURFACE HSUR 3 = STROPHIOLE STRO 4 = MICROPYLE MICR 5 = SIDES SIDE 6 = DORSAL SURFACE DORS 7 = NOT RESTRICTED TO ANY AREA NRST 8 = COMBINATION OF LOCATIONS (Specify) Combo [Comb]

HIL Hilar ring: 1 = NOT PRESENT NPR 2 = NARROW NAR 3 = WIDE WDE 4 = BUTTERFLY SHAPED BUT — UCP Vein-like under coat pattern: 1 = ABSENT ABS 2 = PRESENT PRE

COL Cotyledon color: 1 = WHITE WHT 2 = PALE GREEN PLGN 3 = GREEN GREN — SDCOT Seed coat 1=SMO SMOOTH 2=WRN WRINKLED

9. SEED SHAPE AND SIZE:

V Hilum view: 1 = FLAT FL 2 = ELLIPTICAL EP 3 = OVAL OV 4 = ROUND RN — SV Side view: 1 = OVAL OVL 2 = ROUND RND 3 = KIDNEY KID 4 = TRUNCATE ENDS TRN

S Cross section: 1 = FLAT 2 = ELLIPTICAL 3 = OVAL 4 = ROUND — GMS GM. WEIGHT PER 100 SEEDS ____

LS Classification: 1 = SIEVA SVA 2 = INTERMEDIATE INT 3 = FORDHOOK FHK

WH MM. WIDTH (Dorsal to ventral) ___ — TC MM. THICKNESS (Side to side) ___

LG MM. LENGTH ___ — SI WIDTH / THICKNESS X 10 ___

10. ANTHOCYANIN: (1 = Absent, 2 = Present)

FLA FLOWERS — STA STEM — PDA PODS — SDA SEEDS — LVA LEAVES

11. DISEASE RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) R T = Tolerant

RUST NT RUST (Specify race) _____	ALFSP ANGULAR LEAF SPOT	BCTWT BACTERIAL WILT
BNMOS COMMON BEAN MOSAIC	ANTHR ANTHRACNOSE	LBMOS LIMA BEAN MOSAIC
SBMOS SOUTHERN BEAN MOSAIC	FUSRR FUSARIUM ROOT ROT	CRLTP CURLY TOP
NY15B N.Y. 15 BEAN MOSAIC	DNYML DOWNY MILDEW DMRAC	PWML POWDERY MILDEW
BNMV4 BEAN MOSAIC VIRUS 4	HABLT HALO BLIGHT	FSBLT FUSCOUS BLIGHT
ALFMV ALFALFA MOSAIC VIRUS	ALMV2 ALFALFA MOSAIC VIRUS 2	PODMT POD MOTTLE VIRUS
REDND RED NODE VIRUS	RTKNT ROOT KNOT NEMATODE	OTH DZ OTHER (Specify) _____

12. INSECT RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ APHIDS APHID	☐ LEAF HOPPERS LFHOP	☐ POD BORER PodBR	☐ LYGUS LYGUS
☐ THRIPS thrip	☐ WEAVILS WEEVL	☐ SEED CORN MAGGOT SDCMG	☐ OTHER (Specify) OTHIN

13. PHYSIOLOGICAL RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ HEAT HEAT	☐ COLD COLD	☐ DROUGHT Drgt	☐ OTHER (Specify) OTPH

REFERENCES

The following publications may be used as references in completing this form:

1. Beans of New York. Vol. 1 Part II of Vegetables of New York. U.P. Hedrick et al. J. B. Lyon Company, Albany, N.Y. 1931.

2. Yarnell, S. H., Cytogenetics of the Vegetable Crops IV. Legumes. Bot. Rev. 31:247 - 330. 1965.

3. USDA Yearbook of Agriculture. 1937.

COLOR: Nickerson's or any recognized color fan may be used to determine the colors.

COMMENTS:

EXHIBIT 13-D

revised a.g.m.

Additional description of variety

"SPRIGG" further differs from "WESTLEY" in the physical appearance of the seed.

Seeds from "SPRIGG" are slightly more elongated than the roundish, flat appearance of "WESTLEY".

See Exhibit 13-B pod and seed specimens Package 1 Exhibit 13-B "SPRIGG".